

Facilitation of Risk Communication During the Anthrax Attacks of 2001: The Organizational Backstory

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The anthrax attacks of 2001 created risk communication problems that cannot be fully understood without appreciating the dynamics among organizations. Case studies of communication in New Jersey, consisting of interviews with a range of participants, found that existing organizational and professional networks facilitated trust among decisionmakers. This interpersonal trust improved communication among agencies and thereby risk communication with the public.

For example, “white powder scares” were a problem even in places without contamination. Professionals’ trust in each other was vital for responding productively. Conversely, organizational challenges, including conflict among agencies, hindered communication with key audiences.

Although centralization and increased control are often seen as the remedy for communicative confusion, they also can quash the improvisational responses needed during crises. (*Am J Public Health*. 2007;97:1578–1583. doi:10.2105/AJPH.2006.099267)

IMPROVING RISK COMMUNICATION about terrorism requires understanding not only responses to messages but also the organizations working to manage the risks. The anthrax attacks of 2001 provided an opportunity to understand how organizational factors caused risk communication problems and how organizational strengths helped avoid them.^{1–7}

A central point of disaster research has long been that confusion among organizations is to be expected after significant disruption and that such confusion diminishes effective communications.⁸ Studies also demonstrate that risk communication has been greatly influenced by organizational factors.^{9–11}

We add to this literature by reviewing government officials’ descriptions of how they dealt with organizational challenges during the 2001 anthrax attacks. We then provide examples from 4 case studies¹² involving state, county, and local agencies that served on the front lines of the war on terror in New Jersey. For these case studies, we interviewed public health professionals, emergency responders, police officers, elected officials, health practitioners, and other decisionmakers in 4 geographic areas: one with extensive contamination (Hamilton), one with

a case initially labeled “suspect” by the Centers for Disease Control and Prevention (Bellmawr), one in which 2 people were mistakenly labeled “suspect” by a local health officer (Monmouth), and one with no contamination (Morristown).

(The disease known as anthrax is caused by the bacterium *Bacillus anthracis*; for simplicity, we use the term anthrax when referring to the disease or the bacterium.)

RISK COMMUNICATION ABOUT ANTHRAX

On October 12, 2001, the Federal Bureau of Investigation (FBI) announced that a letter contaminated with anthrax had been processed in a postal distribution facility in Hamilton, NJ. At least 4 contaminated letters were processed there, potentially exposing approximately 1100 workers.¹³ Two cases of inhalation and 3 cases of cutaneous anthrax were confirmed; another case of cutaneous anthrax was suspected.¹⁴

By the third week in October, more than 70% of New Jersey residents were concerned that they or someone close to them could be exposed to anthrax.¹⁵ Although only 4% of Americans reported being affected by the anthrax attacks (i.e., they, a

friend, or a family member had been exposed to or tested for anthrax or had their workplace closed), in an area adjacent to Hamilton, nearly 20% reported being affected.¹⁶ Agencies struggled with an overwhelming volume of requests for information; the New Jersey Department of Health and Senior Services (NJDHSS) received over 6000 calls from October 10 through November 30.¹ Between October 8 and 31, the Centers for Disease Control and Prevention (CDC) received more than 8860 calls related to bioterrorism.¹⁷

Nationally, confusion was widespread. A 2002 survey found that more than 46% of people mistakenly thought anthrax was contagious, leading researchers to conclude that experts “failed to develop and disseminate [facts] in a clear focused way.”¹⁸ Postal workers and Senate staffers in Washington “expressed an overall discontent with the quality and timeliness of information” regarding the risks they faced.¹⁹ Postal workers felt that class, race, and ethnicity led to delays in closing their facility, a sentiment shared by postal workers elsewhere.²⁰

RISK COMMUNICATION AND ORGANIZATIONS

After serious disruptions of routine, such as occurred during

the fall of 2001, organizations may expend considerable resources to reestablish old lines of communication with each other or to create new relationships as a means of sharing critical tasks.

A study of how interorganizational relationships shaped the response to a contaminated office building in Binghamton, NY, demonstrated the importance of these relationships to risk communication.⁹ Early in the morning of February 5, 1981, an electrical fire in the basement of an 18-story building led to the distribution of polychlorinated biphenyls (PCBs), furans, and dioxins throughout the building. Key organizations with different but equally important responsibilities for responding to the situation could not agree on a range of issues, including the most appropriate ways to characterize risks that workers or the public might face. The conflicts led to different definitions of acceptable risk and markedly different ways of executing risk communication strategies. Absent mechanisms that would produce coordinated and effective action, the results were, perhaps, predictable: lack of institutional trust, unnecessary fear of extremely low levels of risk, and closure of the building for over a decade.

During the anthrax attacks, although problems arose because health agencies had not anticipated the extent of coordination needed among responders, generally the communication among organizations was far better. For example, the flow of information among various local and state health agencies was largely effective.¹⁷

However, at the federal level, risk communication was affected by the gulf between the missions,

procedures, and cultures of law enforcement and public health.^{21–23} A National Research Council report found that “[b]ecause of different objectives for law enforcement agencies and public health agencies, data from the sites contaminated in 2001 were not shared with all relevant parties.”^{24(p6)} In addition, according to the acting deputy director at the CDC’s National Center for Infectious Diseases, “decisions were made that CDC should not be a locus of communications.”²⁵ “Soon thereafter,” said the acting director of the CDC’s National Center for Infectious Diseases, “it became clear that CDC was desperately needed as a spokesperson for this outbreak, but by that time we were in a reactive state.”²⁵

Some local health officials were also constrained from releasing information because of the ongoing criminal investigation. Officials reported that “fear in the community could have been reduced if they had been able to release more information to the media and the public,” according to the Government Accountability Office (GAO).^{17(p17)} A notable exception was in Connecticut, where a small hospital defied the FBI and released information about the illness of an elderly woman, who subsequently died from anthrax. The president of the hospital attributed his bold action to the hospital’s long-standing culture of openness.²⁶

Organizational problems were also apparent in health agencies’ relationships with organizations other than law enforcement. For example, Maryland officials noted that informal, midlevel, “pre-vetted” communication channels worked well, but “[f]or the most part . . . interagency

and broad communication occurred haphazardly and too infrequently, resulting in . . . mixed messages to the public.”^{27(p43)} When contamination was found in the US Postal Service’s Stamp Fulfillment Service Center in Kansas City, Mo, inconsistent sharing of information between the Kansas City Public Health Department (KCPH) and other public health officials meant that these agencies had to refer calls they received back to the overburdened KCPH. However, some of the major problems resulted from such severe deficiencies in communications technology within the KCPH that the agency had to resort to using runners to carry messages between floors.⁷

ORGANIZATIONS AND RISK COMMUNICATION IN NEW JERSEY

Interorganizational Relations Hinder Risk Communication

Organizational challenges also hindered risk communication during the anthrax crisis in New Jersey. In an area with already strained relationships among a variety of local and county agencies, one county emergency manager expressed aggravation about trying to get health departments to alert him to developments or to coordinate speaking to the media. Problems also occurred where there were no preexisting relationships at all. For example, one health officer complained that the state police took samples of white powder but there was never a “cross-check with the public health system,” so health officials did not know where samples were taken or what their status was.

Delivery of services. Health officials in New Jersey confronted a number of interorganizational

issues, some that facilitated risk communication efforts and others that hampered it. On October 18, the postal distribution center in Hamilton, NJ, was closed. State officials then recommended that workers take antibiotics because of potential exposures, but officials lacked the resources to directly provide medical services.¹ State officials also lacked authority to tell hospitals how to respond to possible cases of anthrax. Without the ability to provide clinical services or the authority to designate a particular hospital to dispense medication, state officials felt they had little choice but to advise that postal workers see their physicians to obtain prophylactic antibiotics.

The mayor of Hamilton saw an important inconsistency in the state’s message. He said that

on a Friday afternoon you are going to tell people . . . that they are at risk for a deadly infection and that they need to get treated right away and yet . . . they need to make an appointment with their personal physician and then go get a prescription filled.

The urgency in the first part of the message did not seem to match the recommendation for action in the second part. Hamilton’s mayor turned to a local hospital to set up a clinic to distribute antibiotic prophylaxis.

More than 1500 postal workers received approximately 4000 prescriptions for antibiotics through the joint efforts of local public health department staff and hospital personnel, who were advised by the CDC and NJDHSS.¹ One health professional told us that after working all day at the local health department, more than 20 nurses and other staff worked many evenings at the hospital

clinic to provide prophylactic antibiotics to postal workers. CDC and NJDHSS health educators collaboratively developed approaches to encourage workers to take the full course of antibiotics. Because sampling would later show that the Hamilton postal facility was extensively contaminated, those collaborative efforts possibly saved lives.

Yet, even with such collaborations, interorganizational tensions led to other communication problems. In our interviews, some health practitioners expressed frustration with what to them seemed like politics intruding into medical decisionmaking. For example, several felt that nasal swabbing resulted from political pressure rather than diagnostic utility. With time, the Hamilton clinic would establish twice-daily meetings among the practitioners, but until that happened, our respondents reported instances in which they were caught off guard when other practitioners and officials made decisions without consulting them. Finding out information from the media rather than directly was particularly disturbing to them. Because practitioners responsible for running the clinic sometimes received information from agencies second-hand, they were not fully briefed on the rationale for decisions. This trickle-down form of communication made it more difficult to direct staff to exude “confidence and competence” when dealing with workers.

The Centers for Disease Control and Prevention and New Jersey Department of Health and Senior Services. There were many instances of effective collaboration between the CDC and the NJDHSS. Some state officials welcomed federal involvement. As one official put it,

[T]echnically it was our investigation. . . . But [the CDC] provided virtually all the assistance because we didn’t have the staff. And we would meet twice a day, morning and night.

We did find, however, risk communication problems resulting from interactions among health organizations. Sometimes organizational structures impeded coordination, preexisting tensions were exacerbated, or differences in missions created conflict. Although such problems are normal for organizations, they assumed added significance in the context of potential exposure to anthrax.

For example, a significant misstep in risk communication can be attributed to limits in interorganizational communication. After consulting with CDC officials, the state epidemiologist told postal workers that their risk for developing anthrax was “infinite,”^{20(p29)} a statement for which he later apologized. Months after that meeting with postal workers, the epidemiologist found a 2002 article in a CDC journal, *Emerging Infectious Diseases*, that detailed public health efforts in Florida.²⁸ The epidemiologist’s view was that the article suggested that the CDC and the postal service, together or singly, had been insufficiently candid about the presence of anthrax. The GAO reported the incident thus:

Specifically, [the epidemiologists] learned from an October 2002 CDC publication that public health authorities in Florida had provided antibacterial drugs for some postal employees on October 12, 2001—the same day testing was initiated at selected postal facilities in Florida—and that the Postal Service had some preliminary positive test results on October 13, 2001.^{29(p47)}

This was clearly important. As the epidemiologist put it,

On October 13th, they already had preliminary positives from some of the postal facilities. Well, nobody ever told us that. . . . [I]f I had known that on October 13th . . . we might have closed the postal facility [in Hamilton] on October 13th.

Because the state recommended prophylaxis starting October 19, one New Jersey health professional believed that the CDC’s provision of incomplete information did not affect medical outcomes. But the state’s conveyance of the CDC’s information affected risk perception. Listen to a union official:

The [health department official] called everyone in the cafeteria [on October 15] and told us how safe we were. Then 4 days later . . . the SWAT teams were running in . . . in their decontamination uniforms and the FBI were ordering us out of the building within thirty minutes or they were going to put us under arrest. . . . [I]t was like something out of a movie.

Another postal union representative recalled that a state health official “told us you have a better chance of getting hit by a car than getting anthrax.” Such a message might initially have been reassuring. But when workers fell ill with anthrax, the union official “realized nobody had the same story.” This realization, and the resulting distrust, pushed this union to sift through a variety of sources of information to ensure workers got useful, truthful information:

[W]e became the communication network for postal workers. We had everybody sign up through e-mails. I put updated messages on our answering machine . . . people would be able to call and speak to anybody, give me their questions, or the

latest information we knew and that probably became the most powerful thing I ever did.

Unfortunately, the union’s communication efforts resulted from a lack of trust rather than an effort by agencies to involve the union. Involvement of local organizations and groups has been advocated by bioterrorism experts, who suggest that risk communication can thereby be facilitated:

[Such] social ties, communication links, and leadership structures might be used to facilitate a better and more coordinated response after a terrorist attack.^{30(p219)}

A report from the National Research Council notes similarly that such processes can enhance organizational effectiveness and mute mistrust.²⁴

Interorganizational Relationships Facilitate Risk Communication

A task force approach to risk communication. Unlike others who have reported tensions between law enforcement and health organizations,^{21–23} we discovered far more cooperation than conflict in New Jersey. This was especially true in a county where the health officer had created a bioterrorism task force in 1999 (Table 1). Because there was no county health department during the anthrax attacks of 2001, the health officer became the “go-to” person for an area that included 39 municipalities and 14 health officers.

A police detective whom we interviewed saw the task force as a key mechanism for developing relationships with health officials and hence for improving risk communication. “We had no

TABLE 1—County Task Force Facilitation of Risk Communication During Anthrax Attacks: New Jersey, October 2001

Organizational Challenge	Task Force Process	Risk Communication Result
Dilemma of law enforcement need for secrecy versus public health value of openness	Social networks were formed prior to October 2001, which increased trust among officials	Because the dilemma was revealed beforehand, officials could resolve it more easily; messages were coordinated, and knowledge about expertise was spread
Protocols for responding to calls	Health and law enforcement collaborated on testing of “white powder” that the public feared was anthrax	There was clear communication, with a consistent message, to those with concerns regarding white powder
Lack of county health department	Local health officer who formed task force became the informal leader for the county	Problem solving was expedited

Note. The table describes how a bioterrorism task force, initiated in 1999, affected risk communication in a single county in New Jersey during the October 2001 anthrax attacks.

experience or knowledge of how they worked,” he said, “But [the task force] opened our eyes and helped us respond to this problem a lot more efficiently.” He noted, as did other respondents, that law enforcement’s need for secrecy sometimes conflicts with public health’s value of openness. The task force helped bring that conflict to light. More importantly, the task force provided valuable contacts:

[The task force] gave me the ability to sit down and at monthly meetings I was talking to doctors from emergency rooms, the primary doctors in the county, I was talking to health officials, . . . In any business you get competent and incompetent people, and we were able to identify who the competent people were, and when we had questions we could go to these people.

These relationships averted a potential risk communication nightmare caused by inexperienced medical personnel. The local police called a detective after they closed a bank because of a white-powder scare. The detective discovered that a teller had been taken to a medical facility, which, suspecting anthrax, was “doing all kinds of stuff to this poor woman.” The detective suggested the bank send her to another facility with a “more

competent medical authority.” Because of his membership on the task force, he knew “who has seen anthrax, knows what anthrax is and . . . can make a diagnosis.” The bank took his advice. “It wasn’t anthrax and things calmed down quickly after that,” said the detective.

Frequent interaction among a diverse group of professionals also facilitated the production of a consistent message. One law enforcement official said,

[People] were getting the same information. They weren’t calling the police department and getting one message, the fire department and getting another message, and then the health department and getting another message.

The consistency in risk communication, this official said, helped keep people properly informed, reduced public confusion, and facilitated agency operations. Informal social networks, it seemed, provided a mechanism of trust building among professionals and goal alignment among organizations.

Creation of risk communication partners through proximity. When asked why the conflict on the federal level was not seen locally, a local health officer noted it was partially a problem of “scale.” He acknowledged that state and

federal law enforcement officials are “secretive,” but “if I want to see my police chief, I just walk into her office, I’ve been working with her for 25 years; there’s no secrecy.” Thus, social familiarity and physical proximity seemed to have facilitated the development of trust so that different organizational needs did not become insurmountable obstacles.

Although participants in the bioterrorism task force praised the positive relationship between health officials and law enforcement, we heard the same theme in other areas. Surprisingly, the lack of resources encouraged relationships. According to one health officer, “Since locals do a lot with little, we’ve already bridged that gap, we rely on each other for assistance wherever we can get it. There hasn’t been competition for the catbird’s seat.” In this locality, the health department developed messages that were conveyed by police officers who were investigating white-powder scares.

Another health officer said communication was facilitated by his office having previously given police officers hepatitis B shots. That history, plus police concerns about their own safety, cemented a working relationship, he said. This county’s law enforcement

and health department also had longstanding relationships that began when the prosecutor started an environmental crimes unit, which required working closely with the county health officer on environmental issues. In contrast to tensions at the federal level between law enforcement and health professionals, in one county, emergency personnel wanted more involvement with health agencies. One emergency professional lamented that without health expertise, emergency responders confronted considerable difficulty in developing protocols to respond to public concerns. Absent such expertise, the learning curve was steep: one law enforcement official said,

We were basically poring over tons of information [to put] together a program to teach other individuals how to respond to all the white-powder calls.

DISCUSSION

Successful risk communication in a health crisis is often contingent upon effective communication among agencies. Organizational and professional networks were essential to risk communication efforts across the country, including in New Jersey. A bioterrorism task force was established

in one area before the anthrax attacks, and it served as a mechanism that produced networks of people who trusted each other, even if their respective organizational mandates were sometimes at odds. This trust, in turn, facilitated communication among agencies and thereby their communication of risk to those members of the public dealing with white-powder scares.

Other informal networks, including those among police and health agencies, facilitated communication in several locations in New Jersey. Where law enforcement and health agencies had preexisting, cooperative relationships, there was often a commitment to compromise so that differing goals and methods could be accommodated. These networks arose from organizational histories, personal relationships, and necessities.

Unfortunately, relationships among health agencies were, at times, more like those found in fractious families than among collaborators. Interorganizational conflict does not always interfere with effective risk communication, although clearly it can. The conflict may be a manifestation of important differences in interpretations of scientific or medical information that make it difficult for agencies to effectively coordinate risk communication. In some instances, it may be appropriate to air those differences rather than suppress them.³¹ More research is needed about when conflict within and among organizations leads to unproductive communications and when it can be important to combat group-think.³²

Although centralization and increased control are often seen as the remedy for conflict and communicative confusion,³³

findings from the disaster literature suggest that networks, such as those we found in New Jersey, are more flexible, adaptable, and effective.^{34,35} Using "command and control" approaches to reduce confusion and conflict can quash the improvisational responses^{34,35} that public health leaders acknowledge are important for dealing with uncertainty.³⁶ Control and centralization also have the potential to make organizations less permeable and stifle communication among organizations, and hence their communication with others.

Research related to the anthrax attacks also suggests that transparency among organizations is important for facilitating effective risk communication between organizations and the people they serve. We draw our conclusions tentatively; clearly, more research is required. Future research should be focused on the interorganizational and interpersonal arrangements that facilitate effective risk communication. There is a need especially for more systematic research on the conditions under which different kinds of communicative barriers (e.g., organizational cultures, professional training, or mandates) are overcome or are reshaped to foster the mitigation of risk. For when risk is mitigated, there is less urgency to communicate about the danger in the first place. ■

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Human Participant Protection

The institutional review board of Rutgers University exempted this study from review.

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